

XIV. BOOK REVIEWS

(cntd from p.436)

**B l a t t e r, E. & W.S. M i l l i a r d.** Some beautiful Indian trees. 2nd edition revised by W.T. Stearn. Publ. by Bombay Natural History Society, Bombay, India. March 3, 1955. 8°. i-xv, 1-165 pp., 43 fotogr., 31 coloured plates, and text-figures; clothbound. Sh. 30/- net.

A simple, illustrated guide to some of the most beautiful flowering trees to be seen in India and Pakistan. It should be of use and interest throughout the tropics as most of the plants treated are grown as ornamentals outside their native country. Thirty nine species have been fully described with accurate synonymy, and notes on distribution, gardening, uses, economic value, vernaculars, domestic uses, medicinal properties, ethnobotany, and ecology of leaf-shedding, flowering and fruiting seasons. In some cases also closely related species are briefly indicated or described. In appendices descriptions are given of families represented, further a key to the genera, a glossary of some botanic terms, and a bibliography to some sources of further information. An index concludes this very attractive, nicely executed, and relatively very cheap book which is a valuable educative tool to laymen and those interested in gardening in the tropics. It contains much concise adequate information on the plants treated. In a way it is a counterpart to Bor & Raizada's Some beautiful Indian climbers and shrubs, published by the same Society.

There is a key to 4 spp. of *Salmalia* with 2 new comb. There are also keys to *Erythrina*s and *Cassia*s.

**G o o d s p e e d, T.H.** The genus *Nicotiana*. *Chronica Botanica* vol. 16. Waltham, Mass. 1954. 8°, i-xxii, 1-536 pp. 118 fig. Cloth-bound \$ 12.50. Published May 1955.

A magnificent monograph of *Nicotiana*; parts i-v deal with the morphology, cytology of species and of interspecific hybrids, and phyletic by Goodspeed, part vi covers the taxonomy and distribution in collaboration with H.M. Wheeler & P.C. Hutchinson. Sixty botanical species with subspecies and varieties and a number of hybrids have been distinguished;

each species is pictured.

Geographically the genus is very interesting through its well marked South Pacific connections with Australia (with endemics on the intervening islands), Australia harbouring quite a number of species itself. Whether the monograph is exhaustive for the bulk of specimens represented in the major herbaria of the world seems doubtful from the rather scant number of localities cited; it looks rather limited to desired, valuable, and selected sheets.

As far as I know no revision has been based on data assembled from so many fields of science and as such it looks like the last word in the way of monographic work. As usually with *Chronica Botanica* issues the present book is executed in a most attractive way.

H o l t t u m, R.E. Ferns of Malaya. With an appendix by I. Manton. A revised Flora of Malaya, vol. 2. Govt Printing Office, Singapore. 8°. 643 pp. 362 textfig. 3 pl. Cloth-bound Straits \$ 20. net.

The Malay Peninsula being part of the great territory Malaysia, one of the richest in the world and with climatical conditions very suitable to ferns it is not surprising to find Holttum's "Ferns of Malaya" an extraordinarily interesting book. Its only limitation - in the way of territory! - will perhaps even make it more useful and attractive to the general public interested in ferns in Singapore and Malaya, for whom this book has been primarily written. As even now nearly 500 species are described and for a greater part also illustrated, a book of over 640 pages has resulted and for an ordinary amateur-pteridologist the enormous wealth of material and experience must seem - at least at first - something which can hardly be tackled, unless really serious study can be given to it.

A comparison with Backer & Posthumus' "Varens van Java" presses itself irresistably on one's mind. Also here a local flora, written in the first place for the general public - fern lovers - and also here the enormous quantity of species and forms which by necessity and with the greatest limitation of territory and type, have to be conquered before some insight in the vast tropical flora - however specialized a part it may be - can be achieved.

It is therefore only understandable that in comparison with for example the European flora very few books exist on tropical botany which are also written for the non-scientist and every publication on this subject is therefore

a very necessary step to popularize botany in the tropics, the only way by which in the future this vast, practically untapped, reservoir of the plant-realm can hope to be more thoroughly studied.

If one knows how much pleasure Corner's book "Malayan Wayside Trees " has given to countless plant-lovers and has opened the eyes of quite a few who thought the tropical flora an unconquerable sea of plenty, I am sure that Holttum's book will be well received by this same public.

Although talking up till now about its use for the amateur botanist, Ferns of Malaya is certainly and perhaps in the first place a work that is of value to every pteridologist who wants to acquaint himself with the present tendencies in the modern systematics of the pteridophytes in general and with those of Malaya in particular. Contrary to Backer & Posthumus' book in which very little comment has been given on problems of nomenclature, ecology, specific delimitation etc., Dr Holttum gives his readers full advantage not only of his enormous field-knowledge acquired during a life-time, but also in discussing for practically every genus its taxonomical status and the problems still open after intensive research during the last decennia by Christensen, Ching, Copeland, and himself. Although Holttum bases his delimitation of the families on his own system "because I (Holttum) still think that his (Copeland's) Pteridaceae and Aspidiaceae are mixtures of diverse elements", Dr Holttum gives full information on other viewpoints and this characteristic makes the Ferns of Malaya such a valuable book. He also describes the present modern trend of trying to group together those species which are definitely connected through various characters, not by a single character (sorus), as was done by the conservative pteridologists who practically invariably based themselves on the artificial system of Hooker Sr & Baker.

As far as the genera are concerned, Dr Holttum has based himself mostly on Copeland's Genera Filicum with a few exceptions. Some of the changes seem doubtless to be justified (revival of Abocopteris, which Copeland merges with Cyclosorus; revival of Phymatodes, which Copeland merges with Microsorium), but some must meet with criticism (e.g. the inclusion of Thylacopteris in Polypodium: the clathrate scales do not point in the direction of Polypodium).

In the description of Dryopteris the leaf form (cata-dromic) is said to be the same as in Polystichum (anadromic) which seems a mistake, especially as the illustrations clearly show the difference.

As far as the species are concerned: the clear and full descriptions and the numerous personal notes on them make this flora a joy to read and to use. A great advantage is that, apart from the mentioning of the author of every name and important synonyms, also a reference is made to the original publication. This gives the reader a multitude of indications, where to look for further reference; it is a pity however that a general bibliography is omitted. A special feature at the end is an appendix written by Prof. I. Manton giving cytological notes of about a hundred Malayan ferns. The investigation is only in its initial stage, obviously. The writer hopes that some local residents will take it up, although the considerable skill in microscopic study, required for these observations, make it doubtful whether amateurs may embark on it.

An interesting conclusion which can be drawn from Miss Manton's details, is the probability that Holttum's belief that the genera *Thelypteris* (or *Lastrea*), *Cyclosorus*, *Abacopteris* etc. are wholly separate from *Dryopteris* and its derivatives, is justified, whereby Copeland's *Aspidiaceae* clearly become a collection of heterogenous genera.

There is so much more in this book which induces the reader to think further than the determination of single species that the available space would not be sufficient to mention it all. Let us therefore finish by recommending this extremely interesting, enjoyable and thoroughly scientific book, written by a learned, but modest expert with lifelong experience, to all fern-lovers and especially to those in Malaysia.

J.G. de Joncheere

M e r r i l l, E.D. The botany of Cook's voyages. Chronica Botanica vol. 14, no 5/6, 1954. Waltham, Mass. textfig. 1-17, pl. 80-93. Cloth-bound. \$ 4.75.

The botany of these voyages mainly to Tahiti (1768-1779) has provided an equally welcome as unexpected addition to our knowledge of the peopling of the Pacific basin. The materials preserved in the British Museum collections of Banks & Solander and supplemented by those of the two Forsters (2nd voyage) has shown that there were in the central part of the Pacific, prior to 1769, that is prior to European contacts, no weeds and cultivated plants of neotropical origin with the single possible exception of the sweet potato. The Central Pacific apparently did not

receive much of the imports dispersed along the old Spanish galleon route from Mexico via Guam to Cebu, Panay and Manila (1565-1815). On the other hand a great number of New World cultigens and weeds were imported into (Africa and) SE. Asia by the old trade route of the Portuguese: Lisbon, E. Brazil, Cape of Good Hope to Goa (1500-1665), Portuguese establishing contacts in Ceylon, Malacca, Siam, Cochin, Macao, Moluccas, and Canton.

These botanical facts are extremely significant and have a wide bearing beyond pure diffusion problems of cultivated plants and weeds, as explorers and migrating people never travel without plants, cultigens intentionally, weeds unintentionally, and have never done so. This means that the Banks & Solander collections absolutely defy a peopling of the Pacific from the New World by American Indians as advocated by the Kon Tiki theory of Heyerdahl and others.

In Holland the latter hypothesis has been abandoned on linguistic reasons by P.E. Josselin de Jong (see reference this Bull. p. 449). The East Pacific basin has up to Columbian time apparently been a dominant barrier both to migrating man and plants, a no-man's land forbidding contacts.

The author has found it necessary to dissect all botanical papers which are in favour of the Kon Tiki and similar theories and finds them, I think rightly, defective. It is in my opinion deplorable, however, that there are quite a number of repetitions in the book and that through this it has assumed a rather personal character with many unnecessarily pointed comments, though it should be admitted that some incredible theories needed strafing. This controversial flavour is apparently partly due to the remarkable sympathy for Kon Tiki theories in American circles of geography and social science, partly to the fact that this book was apparently composed by partly overlapping separate portions written at intervals. These features cannot, however, diminish the basic value of the botanical facts, clearly understood and advanced by Dr Merrill.

It would have been desirable to add a complete list of the Banks & Solander collections. Furthermore it will be of value to analyse in the same way the collections made by Commerson in Tahiti one year before Cook with the French expedition of the *Étoile* & *Boudeuse*, which might be performed at Paris provided that the necessary archives and lists are trustworthy and the botanical specimens can be traced.

M o h r, E.C.J. & F.A. v a n B a r e n. Tropical soils.  
Uitg. W. van Hoeve, Publishers, The Hague.  
1954. 498 pp. 103 fig., 143 tab., 4 col.  
pl. Cloth Dfl. 32,75.

Prof. Mohr's book (in Dutch) "De bodem der tropen in het algemeen, en die van Nederlandsch-Indië in het bijzonder" (1933-1938) has been out of print for the past ten years. Although this book was translated into English by R.L. Pendleton under the title "The soils of equatorial regions" (publ. by J.W. Edwards, Ann Arbor, Mich. 1944) the need has been felt for a revised textbook on tropical soils, as expressed by the 4th Int. Soil Congress, Amsterdam, 1950. The present authors have both been director of the Soil Science Institute, Bogor, Indonesia, and much of the outcome of this second edition is based on personal experience with regard to the soils of Indonesia. The concept of soil genesis has been reproduced with minor alterations from the senior author's book mentioned above. The undertitle reads "A critical study of soil genesis as related to climate, rock, and vegetation". The first chapter is, consequently, devoted to fundamental considerations of atmospheric climate and soil climate, followed by chapters on rock and rock minerals, climate versus rock, rock weatherings, clay mineral formation in tropical soils, mineral associations in rocks, granulometric analysis in relation to the diagnosis of tropical soils, formation and decomposition of organic matter, genetic conceptions of tropical soil formation, its application to Indonesian soils, followed by chapters on lateritic soils, podzolic soils, margalitic soils, and other important tropical soil types, with a final chapter on classification of tropical soils and 3 indexes.

A most welcome, well illustrated textbook of general use throughout tropical regions.

S a c h e t, M.H. & R. F o s b e r g. Islands Bibliographies. Publication 335 of the Nat. Acad. of Sciences. National Research Council, Washington, D.C. 677 pp. \$6.00  
(Unesco book coupons will be accepted).

This bulky mimeographed volume consists of three separate annotated bibliographies dealing respectively with 1. Micronesian Botany, 2. Land Environment and Ecology of Coral Atolls (not limited to the Pacific), and 3. a selected one on the Vegetation of Tropical Pacific Islands (including Melanesia and the islands in the Coral Sea, not covered

by any other bibliography). The entries have been arranged alphabetically as to the author, but each bibliography (especially that on atolls) is followed by very extensive subject and geographical cross indices, which refer to author and year of the concerned publication. It would have facilitated consultation considerably, if the years had been typed before the entries as in Merrill & Walker's bibliography of the Pacific.

The main title of the volume is little specific, but it must be admitted that it is not easy to find a better one, which of necessity must cover bibliographies of quite a different range and scope. I myself would have preferred separate publication, but once that it was decided that they should be united in one, it would have been advisable to have made headlines over all pages, as this book with three bibliographies, three indices, a list of serial abbreviations and addenda to each of the four chapters (only partly indexed), is difficult to handle without such.

The authors who only intended to make available their knowledge of literature brought together for special fields of study, for students of the Pacific, performed a tremendous job, as anyone who is familiar with this kind of work will recognize and appreciate. This contribution is a valuable asset which will be extensively used, though in my opinion many non-botanical entries could have been dropped. On the other hand it seems a pity that in the bibliography on the vegetation of tropical Pacific islands in general no floras and check-lists were included, as one can hardly study a vegetation without knowing its constituents.

M.J. van Steenis-Kruseman

W a l k e r, E.H. Important trees of the Ryukyu Islands  
U.S.Civil Administr. of the Ryukyu Isl.  
Spec.Bull. 3, 1954. 4<sup>o</sup>, 2 column (Jap.-  
Engl.) mimeogr. 350 pp. 309 fig.

Descriptions of families and species, and keys to the genera or/and species. Notes on distribution, habitat, wood, uses; no synonymy and references, in some cases a synonymous name is cited. Bibliography, glossary, and indices.

Certainly a well-illustrated worthy attempt towards a forest-flora of the Ryukyus, published in co-operation with the Pacific Science Board, Smithsonian Institution, and the Forestry Bureau, Okinawa.